

1. LISTING OF CLAIMS

2
3 1-18 (Canceled)

4 19. (New) An apparatus including:

5 (a) a release chamber adapted to contain a liquid reactant metal up to a liquid reactant
6 metal level;

7 (b) a submerging arrangement for moving a container to a release position within the
8 release chamber and below the liquid reactant metal level;

9 (c) a collection area having an upper boundary defined by an upper surface of the
10 release chamber, the upper surface of the release chamber being spaced apart from
11 a bottom surface of the release chamber along a vertical axis; and

12 (d) a flow inducing arrangement for inducing a flow of a first liquid reactant metal
13 through the release chamber in a direction transverse to the vertical axis.

14
15 20. (New) The apparatus of claim 19 further including a liquid reactant containment vessel
16 having a liquid reactant metal flow path to the release chamber and wherein the flow
17 inducing arrangement is located within the liquid reactant metal containment vessel.

18
19 21. (New) The apparatus of claim 20 wherein the flow inducing arrangement is located
20 proximate to the release chamber.

21
22 22. (New) The apparatus of claim 19 wherein the submerging arrangement includes a
23 submerging structure adapted to be driven between a retracted position above the liquid

1 reactant metal level in the release chamber and an extended position in which a distal
2 portion of the submerging structure extends below the liquid reactant metal level.

3
4 23. (New) The apparatus of claim 22 further including a feed area located adjacent to the
5 release chamber.

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7 24. (New) The apparatus of claim 23 wherein a path of the submerging structure from the
8 retracted position to the extended position passes through the feed area.

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10 25. (New) The apparatus of claim 24 wherein the flow inducing arrangement is located
11 adjacent to the feed area.

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13 26. (New) The apparatus of claim 19 further including a liquid reactant metal treatment
14 system that includes a reaction chamber adjacent to the release chamber in position to
15 receive the first liquid reactant metal flowing through the release chamber.

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17 27. (New) The apparatus of claim 19 further including a conduit connected between the
18 collection chamber and a liquid reactant metal treatment system.

19
20 28. (New) An apparatus including:

21 (a) a release chamber adapted to contain a liquid reactant metal up to a liquid reactant
22 metal level therein;

23 (b) a dunker member adapted to be driven along an incline between a retracted

1 position above the liquid reactant metal level and an extended position in which a
2 distal portion of the dunker member extends to a release location within the
3 release chamber and adjacent to an inlet opening of the release chamber; and
4 (c) a collection area with an upper boundary defined by an upper surface of the
5 release chamber.
6

7 29. (New) The apparatus of claim 28 wherein the liquid reactant metal level is above the
8 upper boundary of the collection area.
9

10 30. (New) The apparatus of claim 28 further including a feed area that is adjacent to the
11 release chamber.
12

13 31. (New) The apparatus of claim 30 wherein a path of the dunker member from the retracted
14 position to the extended position passes through the feed area.
15

16 32. (New) The apparatus of claim 28 further including a flow inducing arrangement for
17 inducing the flow of a first liquid reactant metal through the release chamber from the
18 inlet opening of the release chamber to an outlet opening of the release chamber.
19

20 33. (New) The apparatus of claim 32 further including a reaction chamber adjacent to the
21 release chamber in position to receive the first liquid reactant metal flowing through the
22 outlet opening of the release chamber.
23

1 34. (New) A method including:

- 2 (a) moving a container of feed material to a release location below an upper surface
3 of a liquid reactant metal;
4 (b) releasing feed material from the container while the container is held at the release
5 location;
6 (c) collecting a released fluid in a release chamber, the released fluid made up of fluid
7 generated from the released feed material; and
8 (d) contacting the released fluid with the liquid reactant metal.

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10 35. (New) The method of claim 34 further including inducing a flow of liquid reactant metal
11 through the release chamber from an inlet end of the release chamber to an outlet end of
12 the release chamber.

13
14 36. (New) The method of claim 34 further including the step of contacting the released fluid
15 with a second liquid reactant metal.

16
17 37. (New) The method of claim 34 further including carrying at least a portion of the released
18 fluid into a reaction chamber in a flow of the liquid reactant metal.

19
20 38. (New) The method of claim 34 further including the step of removing at least a portion of
21 the released fluid from the release chamber and injecting the removed portion into the
22 liquid reactant metal.